APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,440	11/01/2001	Peter C. Vinsel	85710.P049	3554

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SMITH-HILL AND BEDELL, P.C.
16100 NW CORNELL ROAD, SUITE 220
BEAVERTON, OR 97006

EXAMINER
MERED, HABTE

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	**Applicant(s)**
Office Action Summary	10/002,440	VINSEL, PETER C.
	Examiner	**Art Unit**	
	Habte Mered	2662	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>01 November 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>06/17/2002</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   **Claims 1-40** are rejected under 35 U.S.C. 102(e) as being anticipated by Hegde

(US 6,876, 654).

Hegde discloses a packet forwarding method and apparatus and describes how

layer 2 and layer 3 switching is done. Hedge's system switches and routes network

data packets at high rates with substantially less processing overhead because the

layer 2 and layer 3 switching is done without the involvement of the CPU or the

Operating System (OS).

3.   Regarding **claims 1 and 22**, Hegde discloses a method of forwarding data

packets in a network device having an operating system **(See Figure 3, CPU 80;**

Column 4, Line 5 and 30-35. The operating system is the core software that

resides on the CPU.), the method comprising: initiating a switching microdriver to

retrieve a data packet **(Column 5, Lines 60-63; Figure 4 Switching engine 100; In**

Hegde's system the switching engine 100 in Figure 4 is equivalent to the

switching microdriver initiates packet retrieval via the port interfaces 120-1 in

Figure 4) ; and forwarding the data packet to or from the switching microdriver without

involvement of the operating system **(Hegde shows that the switch engine always**

forwards packets without the involvement of the OS (i.e. CPU) so long as it can

resolve where it needs to forward it to by looking at a lookup table. See Column 6,

Lines 5-13)

4.   Regarding **claims 2, 23 and 33**, Hegde discloses a method further comprising

performing switching functions by the switching microdriver to forward the data packet.

(See Column 6, Lines 5-13)

5.   Regarding **claims 3, 15, 21, 24, and 34**, Hegde discloses a method wherein

performing switching functions by the switching microdriver to forward the data packet

includes making any one of a layer 2 and a layer 3 switching decision in the switching

microdriver. **(See Figure 6, Steps 40 and 60;Column 10, Lines 14-17)**

6.   Regarding **claims 4, 6, 25, 27, 37 and 38**, Hegde discloses a method further

comprising forwarding the data packet to a network interface microdriver. **(In Hegde's**

system the port interface 120-1 in Figure 4 is the network interface microdriver

that interfaces with the port and is used by the switch engine to access the ports.

Column 6, Lines 7-10)

7.   Regarding **claims 5, 7, 26, 28, 35, and 36**, Hegde discloses a method wherein

no context switching is performed by the operating system in conjunction with

forwarding the data packet to or from the switching microdriver. **(Hegde clearly points**

out that the CPU or OS involvement forwarding data packets is limited to

updating the route table when the switch engine cannot resolve the flow. See

Column 6, Lines 4-13. In Figures 7and 8 the CPU is notified only when an entry is

not found in a routing or flow table.)

8.   Regarding **claims 8, 29 and 39**, Hegde discloses a method wherein forwarding

the data packet to or from the switching microdriver includes receiving the data packet

from a network interface microdriver. **(Hegde teaches the port interface (i.e. the**

network interface microdriver) is the link that connects the switch engine with the

ports and any packet received or forwarded by the switching engine has to go

through the port interface (i.e. network interface microdriver) See Column 5, Lines

50-53 and Column 6, Lines 7-11)

9.   Regarding **claims 9, 16, 30, and 40**, Hegde discloses a method wherein the

switching microdriver may perform the functions of a network interface driver for the

operating system and may perform the functions of a network interface microdriver

without involvement of the operating system. **(Hegde teaches that the CPU is only**

involved when flow control cannot be resolved and the switch engine is

responsible for forwarding data and controlling the forwarding of data to the

network interface microdrivers (i.e. port interfaces) which used to be done by the

CPU in prior art. See Column 7, Lines 52-65 and Column 13, Lines 45-55)

10.   Regarding **claim 10**, Hegde discloses a method of forwarding data packets in a

network device having an operating system **(See Figure 3, CPU 80; Column 4, Line 5**

and 30-35. The operating system is the core software that resides on the CPU.),

the method comprising: indicating that a data packet has been received by a component

of the network device from a network interface port **(See Column 5, Lines 16-20);**

initiating a first network interface microdriver to process the data packet**(See Column 5,**

Lines 50-53; The port interface which serves as the network interface microdriver

is responsible for getting the packets from the port to the switch engine. As the

switch engine continually monitors packet arrival it has to initiate the port

interface to retrieve data from the port and pass the data to the switch engine.);

receiving the data packet at the first network interface microdriver from the component

of the network device **(See Column 5, Lines 16-20 and 50-53)**; and sending the data

packet from the first network interface microdriver to a switching microdriver without

involvement of the operating system**(Hegde teaches that the CPU or OS is involved**

in any part of data packet receiving and forwarding when a flow is unresolved.

Column 6, Lines 5-13).

11.   Regarding **claims 11 and 19**, Hegde discloses a method further comprising

forwarding the data packet from the switching microdriver to a selected location without

involvement of the operating system. **(See Column 6, Lines 5-13)**

12.   Regarding **claim 12**, Hegde disclose a method wherein involvement of the

operating system comprises the operating system performing a context switch.

(Performing a context switch or interrupt for an operating system is standard and

must.)

13.   Regarding **claim 13**, Hegde discloses a method wherein involvement of the

operating system comprises the operating system initiating an interprocess

communication facility. **(Hegde discloses that the CPU Interface 110 in Figure 4**

facilitates interprocess communication facility. See also Column 5, Lines 45-50)

14.   Regarding **claims 14 and 20**, Hegde discloses a method wherein the selected

location is a second network interface microdriver. **(Hegde discloses that the switch**

engine can forward data packets from a first port interface to a second port

interface. Column 6, Lines 5-10)

15.   Regarding **claim 17**, Hegde discloses a method of forwarding data packets in a

network device having an operating system (See Figure 3, CPU 80; Column 4, Line 5

and 30-35. The operating system is the core software that resides on the CPU.) , the

method comprising: forwarding a data packet at the device driver layer in the network

device, without the operating system performing context switching in conjunction with

forwarding the data packet. **(Hegde shows that the switch engine always forwards**

packets without the involvement of the OS (i.e. CPU) so long as it can resolve

where it needs to forward it to by looking at a lookup table. See Column 6, Lines

5-13)

16.   Regarding **claim 18**, Hegde discloses a method further comprising: indicating

that the data packet has been received by a component of the network device from a

network interface port**(See Column 5, Lines 16-20)**; initiating a first network interface

microdriver to process the data packet**(See Column 5, Lines 50-53; The port interface**

which serves as the network interface microdriver is responsible for getting the

packets from the port to the switch engine. As the switch engine continually

monitors packet arrival it has to initiate the port interface to retrieve data from the

port and pass the data to the switch engine.); receiving the data packet at the first

network interface microdriver from the component of the network device **(See Column**

5, Lines 16-20 and 50-53); and sending the data packet from the first network interface

microdriver to a switching microdriver **(Column 6, Lines 7-10)**.

17.   Regarding **claim 31**, Hegde discloses a system **(See Figures 3 and 4)**

comprising: an interprocess communication facility comprising an operating system

aware portion **(Figure 3, CPU 80 and Figure 4, element 110)** and a non-operating

system aware portion **(Figure 4, Switch Engine 100)**; a switching microdriver **(Figure

4, Switch Engine 100)**; coupled to the interprocess communication facility **(Figure 3,

CPU 80 and Figure 4, element 110)** to perform switching decisions without using an

operating system aware portion of the interprocess communication facility **(See Column

6, Lines 3-13)** ; a network microdriver coupled to the switching microdriver**(Figure 4,

element 120, Column 5, Lines 50-53)**; and a physical port coupled to the network

microdriver **(Figure 4, element 50, Column 5, Lines 50-53)**.

18.   Regarding **claim 32**, Hegde discloses a system wherein the switching

microdriver retrieves a data packet and forwards the data packet to or from the

switching microdriver without involvement of the operating system. **(See Column 6,

Lines 5-13)**

Conclusion

19.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. The following US Patents and US Application Publications are

cited for disclosing related subject matter:

          US Patent (6, 570, 875) to Hegde

          US Patent (6, 907, 042) to Oguchi

US Patent (6, 499, 065) to Hyder et al

US Pub. No. (2005/0055460) to Johnson et al

Int. Pub. No. (WO 99/00936) to Muller

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

08-08-2005
HM

JOHN PEZZLO
PRIMARY EXAMINER